BICY

PROPOSED SENSITIVE RESOURCE AREAS
BIG CYPRESS NATIONAL PRESERVE
FLORIDA

Prepared in Reference to Mineral Development

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U.S. Department of Interior / National Park Service

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I. INTRODUCTION

Big Cypress National Preserve (BICY) was established in 1974 by Public Law 93-440 to ensure the preservation, conservation and protection of the natural, scenic, hydrologic, floral, faunal and recreational values of the Big Cypress watershed, and to provide for the enhancement and public enjoyment thereof. The preserve encompasses 570,000 acres in south Florida and is characterized by a diversity of subtropical plant communities. Patterns in which these communities occur, and their associated wildlife species, are largely determined by the area's natural water regime. Basically, an overland sheet flow pattern is characteristic of the preserve during the wet season in summer and early fall. With the onset of the dry season, natural surface water flows are largely confined to the strands and sloughs.

Habitat in the preserve ranges from aquatic to relatively dry areas, in which the hydroperiod may be limited to 10-45 days annually. Eight general vegetation types have been identified, representing both tropical and temperate zone species (Duever et al. 1979). McPherson (1973) illustrated the aerial extent of each of the preserve's plant communities. In decreasing order of aerial extent, the communities are cypress forest (43%), prairies (24%), pine forest (18%), mixed swamp forest (6.4%), inland marshes, sloughs and ponds (4.2%), hammock forest (1.5%), coastal forest (1.4%) and coastal marshes (0.9%). Less than 1% of the preserve is classified as disturbed lands.

The enabling legislation allowed for the continuation of certain land use activities, including the exploration for and extraction of oil, gas and other minerals, subject to rules and regulations deemed necessary and appropriate by the Secretary of the Interior to protect federal land interests. It is further stipulated that no oil and gas rights will be acquired unless the Secretary determines that such property will be threatened with uses detrimental to the purposes of the preserve. Following these provisions of the law, acquisition of lands within the preserve involve securing title to the surface estates, while allowing title to the mineral rights (subsurface estates) to remain with respective private or state interests. In combination with other legislated activities (e.g. off-road vehicle use, and hunting, etc.), the classic administrative paradox is created by providing resource protection while allowing for resource use.

Oil and gas were first discovered in south Florida in 1943, at Exxon's Sunniland field located 10 miles northwest of the preserve. Since that time Exxon's operation in south Florida has expanded to nine fields of approximately 80 wells which produce nearly 5 million barrels of crude oil annually. The Bear Island field (one of the nine fields) was discovered within the preserve in 1972 and produces 500,000 bbls.

These relatively recent discoveries of oil and gas (both within and adjacent to the preserve) and renewed concern with locating domestic reserves, have prompted an increasing interest in additional exploratory operations, including geophysical exploration, as well as exploratory drilling. In response to this increase, in the preserve and other NPS units, the Park Service promulgated "Minerals Management" regulations (36 CFR 9B). The regulations became effective on January 8, 1979.

The "Minerals Management" regulations designated the Park Service as the lead agency in assessing proposed and ongoing oil and gas activities within any unit of the National Park System for compliance with environmental regulations. The primary objective is to ensure that oil and gas activities are uniformly conducted to minimize damage to resources of the unit. Since the promulgation of these regulations, four companies have submitted plans of operations to drill 36 wells and conduct 10 miles of seismic operations within the preserve.

II. PURPOSE AND NEED

The intent of this project is to provide for the oil and gas industry and mineral rights holders an overview of the environmental issues associated with oil and gas development within the preserve. The Sensitive Resource Areas map provides general locations of sensitive areas throughout the preserve. The map only provides general locations and summarizes only land status planning and research studies that have been completed to date. Because the map is prepared at a small-scale the mapping of some sensitive elements are not included, such as cypress domes and smaller tropical hardwood hammocks. Nevertheless, this document outlines environmental issues that must be addressed in plans of operations submitted under the NPS "Minerals Management" regulations for mineral development within the preserve.

A sensitive resource area (SRA), as used in this document, is defined as an area that is deemed important for a particular ecological function it performs, for the natural or cultural values it supports or for its necessity for BICY administrative purposes and visitor use activities. In reference to the purpose of this project, the sensitive areas are designated not only for their intrinsic values, but are defined relative to potential impact from oil and gas activities. This definition and the designation criteria and justifications set forth in the following sections constitute general guidelines for evaluating the exercise of private oil and gas rights within the Big Cypress National Preserve.

In the identification of SRAs, it is not the intent of this document or the Park Service to preclude exploration and development of oil and gas resources in given areas of the preserve. Rather, this document is designed to assist industry in planning mineral resource development within the preserve. The identified surface resources are especially sensitive to potential disturbance from oil and gas activities proposed within these areas. With adequate planning, potential environmental impacts may be mitigated, allowing mineral development to continue while the Park Service fulfills its management responsibilities to protect the ecological and historical integrity of the preserve.

The intended use of this document is twofold: to assist industry in its planning efforts by providing criteria for general sensitive resource areas where development may conflict with NPS management goals and objectives, and to provide a more defined framework for the Park Service to review oil and gas plans of operations and manage those activities in a comprehensive and consistent manner.

III. METHODOLOGY

A variety of federal and state statutes, regulations and management policies were reviewed in the development of the sensitive resource area criteria. Additional information, including the preserve's legislative history, was analyzed as to the intent of the legislation. These references, hereafter referred to as guidelines, collectively represent the basis on which the criteria for sensitive resource areas were prepared; these guidelines are included in appendix A.

One guideline may contain a greater emphasis on environmental protection than another. For example, the enabling legislation for the preserve has a strongly worded intent to ensure preservation of the area's significant natural values. Conversely, state statutes and regulations for energy resource development are primarily directed toward the permitting of oil and gas drilling, but do include an expression of intent to protect certain features, such as fish, wildlife and wetlands. Despite apparent differences in emphasis on environmental protection that exist in the guidelines used in formulating these criteria, all are similar in that they contain some concern for environmental factors.

The guidelines were reviewed to identify any stated purpose or intent relating to or showing a concern for environmental protection. The objective of the guidelines is to develop a set of valid and accurate criteria that are consistent with the purpose and intent of applicable legislation, regulations and management policies.

Using direction provided in the guidelines, the following criteria were formulated to identify an SRA area:

*The area contains exemplary samples of the natural, scenic, hydrologic, floral, faunal and recreational values for which the preserve was established.

*The area is essential to the process of protecting the ecological integrity of Everglades National Park by maintaining water flow and quality throughout the preserve.

*The area provides necessary habitat for the continued survival of federally recognized threatened or endangered species of flora or fauna.

*The area contains Native American cultural sites.

*The area contains important historic or archeological resources.

*The area encompasses NPS research plots, water gauging stations and permanent transects used for collecting baseline environmental data and for conducting scientific research.

*The area is important to maintaining the scenic integrity of the preserve where visitor experience may be of concern.

*The area contains developed facilities and means of access that support visitor use activities.

Based on the above criteria, 12 categories of sensitive resource areas are identified for the preserve. New information or conditions may warrant future modification of these categories. A description and discussion of the significance of each area follows. Unless other references are noted, descriptions of each category are adapted from Deuver (1979).

IV. CATEGORIES OF SENSITIVE RESOURCE AREAS

1. Major Corridors of Water Flow and Cypress-Mixed Hardwood Swamp Forest

Within Big Cypress National Preserve, major corridors of water flow are located along the western boundary, in the midsection along the Tamiami Trail crossing, and south of the Tamiami Trail.

The primary plant communities within these corridors are cypress-mixed hardwood swamp forest. These two vegetation types are distinguished by the dominant overstory species, cypress. In the mixed hardwood swamp forest, logging of cypress resulted in previously subcanopy hardwood trees becoming dominant. Thus, once quite similar in composition, cypress and mixed hardwood swamp forests are considered together in this description. Also, due to such close association of cypress-mixed hardwood forest with major corridors of water flow, discussion of specific factors responsible for the significance of these two areas is combined. In general, this significance is due to their hydrological and biological values.

250+DAY
HYDROPERIOD

Swamp forests occur in sinuous bedrock depressions paralleling the gradual topographic gradient. Lengthy hydroperiods, usually in excess of 250 days per year, characterize this vegetation community. Organic soils (histosols) underlie these forests and are perpetuated by the low oxygen levels associated with almost continuous saturation. Generally elongated parallel to water flow, swamp forests are also generically known as strands.

The cypress-mixed hardwood swamp forest (or cypress strand), characterized by an overstory of bald cypress (*Taxodium distichum*), has the second highest diversity of tree species in the preserve, hardwood hammocks have the highest. Other trees in this forest include various hardwood species that usually only attain subcanopy heights. These species include red maple (*Acer rubrum*), pop-ash (*Fraxinus carolinana*), pond-appli (*Annona glabra*), swamp ban (*Persea borbonia*), magnolia (*Magnolia virginiana*), strangler fig (*Ficus aurea*) and willow (*Salix caroliniana*). Epiphytes are abundant on these trees. The understory is composed of various ferns and aquatic herbs.

In addition to cypress strands, the cypress-mixed hardwood swamp forest category also includes cypress domes. These features, small and localized, are difficult to delineate at the scale presented on the enclosed map. Occurring in circular or elongated bedrock depressions, cypress domes (as well as small cypress strands) are characterized by a monospecific overstory of pond cypress (Taxodium ascendens or Taxodium distichum var nutans). Understory species include bladderwort (Utricularia spp.), swamp fern (Blechnum serrulatum), spike rush (Eleocharis cellulosa), marsh fleabane (Pluchea foetida), buttonbush (Cephalanthus occidentalis), cocoplum (Chrysobalanus icaco), willow (Salix caroliniana), wax myrtle (Myrica cerifera), and many species of bromeliads (largely of the genus Tillandsia) and orchids.

The cypress-mixed hardwood plant community is sensitive in that it contains numerous candidate endangered and threatened plants. Species of concern include epiphytes (Orchidacea, Bromeliaceae, Piperaceae), certain ferns and rare trees, such as the royal palm. Cypress pop-ash, pond apple and other tree species are host plants for threatened epiphytes. To date, five plants within this community have been nominated for federal listing (Smithsonian 1975).

Relative to other plant communities of Big Cypress, the cypress-mixed hardwood swamp forest has the highest water flow rate of any cross-sectional area in the preserve. Major natural corridors of water flow are Gum Slough, Dayhoff Slough, Sig d Walker Strand, Lostman's Slough, (Dixon's Slough) and East Slough south of the Tamiami Trail; Okaloacoochee Slough, East Hinson Strand, (Best East Crossing Strand) and Deep Lake Strand along the western preserve boundary; and Halfway Creek, Turner River, (Barnes Strand,) (Skillet Strand,) (Georges Strand,) New River Strand, Monroe Strand, Gannet Strand, Gator Hook Strand and Roberts Lake Strand, all traversed by the Tamiami Trail corridor.

OUTLINE IN

The preserve and its major corridors of water flow encompasses much of drainage subarea C as delineated by Klein (1970). The origin of this water (that which is not accounted for by local rainfall contributions) is from the portion of subarea C north of the Tamiami Trail. Like all the area south of Lake Okeechobee, Big Cypress National Preserve encompasses part of a once continuous watershed draining southcentral Florida to the Gulf of Mexico and Florida Bay. Water flows are generally in a south-to-southwest direction through the major flow corridors of Big Cypress. Quantitative flow data are available for the latter 11 major corridors of water flow listed above (Hydrology Research staff, South Florida Research Center, Everglades National Park). These data provide estimates of the water volume flowing through the preserve and lend additional support to the designation of these areas as sensitive. All ecosystems of this watershed are highly dependent on and finely tuned to rhythms of water flow; indeed, to regard water as the lifeblood of the system's plant and animal communities is not merely poetic, it is entirely true.

HYDROLOGICAL SENSITIVE AREAS

Waters of Big Cypress drain south and southwest into Everglades National Park. Interruption of this flow in any way will cause adverse effects to the downstream ecosystems of Big Cypress and Everglades, hence, the designation of major corridors of water flow and the associated cypress-mixed hardwood swamp forest as environmentally sensitive.

2. Hardwood Hammocks

Found in elevated bedrock areas overlain by sandy peat, mixed hardwood forests, known as hammocks, support a relatively species-rich plant community of temperate and tropical species. Of all vegetation types in the preserve, hardwood hammocks have the highest diversity of woody species. Hardwood hammocks fall into two general types, tropical hammocks and oak hammocks. Tropical hammocks are dominated by the West Indian tree species such as tamarind (*Lysiloma latisiliquum*), gumbo-limbo (*Bursera simaruba*), lancewood (*Nectandra coriacea*), Pigeon plum (*Coccoloba diversifolia*), Simpson's stopper (*Myrcianthes fragrans*), willow bustic (*Bumelia salicifolia*), and white stopper (*Eugenia axillaris*). Temperate species such as laurel oak (*Quercus laurifolia*) and hackberry (*Celtis laevigata*) are common canopy codominants. Oak hammocks are dominated by laurel oak (*Quercus laurifloia*), with cabbage palm (*Sabal palmetto*) as a common subcanopy species.

10-45 DAY HYDROPERIOD

The significance and sensitivity of hardwood hammocks is due to two factors. First, hammocks contain numerous endangered, threatened or rare plants, from small epiphytes (hand fern) to large trees (Simpson's stopper). Second, due to their relatively short hydroperiods (10-45 days annually), hardwood hammocks support the majority of archeological sites known in the preserve. Both of these aspects of hammocks would be adversely affected by physical disturbance from oil and gas development; thus, the designation of hardwood hammocks as sensitive resources.

3. Mangrove Forest

Second overall only to that of marine waters, the vascular flora of the mangrove zone with only 13 species is the least diverse of any vegetation community in south Florida. Species characterizing this community are the red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*), black mangrove (*Avicennia germinans*) and buttonwood (*Conocarpus erectus*). Epiphytes of the genus *Tillandsia* are frequent in the mangrove vegetation community.

RARELY DRY OUT

Mangrove forests perform several important ecological functions, such as storm wave attenuation, providing wildlife habitat and contributing to estuarine food chains. These areas also serve as important nurseries and spawning grounds for numerous estuarine and marine species.

The mangrove community is not fire tolerant and may be completely killed by fire or drought. In fact, mangroves will not grow in any area that routinely dries out; the existence of this vegetation community is not compatible with fill activities required by oil and gas development. Due to the importance of mangroves to estuarine communities and as a storm buffer and their intolerance of disturbance, this plant association is regarded as a sensitive resource.

4. Old-growth Pinelands

The major overstory species in pine forests of south Florida is slash pine (*Pinus elliottii* var. *densa*). Understory dominants are chiefly palms--

cabbage palm (*Sabal palmetto*) and saw palmetto (*Serenoa repens*)--or mixed grasses (*Muhlenbergia*, *Andropogon*, *Paspalum*). Pinelands generally grow on topographic highs (hence the reference to pinelands as pine islands) and consequently have a relatively short hydroperiod (20-60 days per year). Old-growth pinelands are distinguished from other pinelands in that they have never been logged.

20-60DA
HYDRO

Stands of mature, never-lumbered slash pine occur in two areas of Big Cypress National Preserve. Ten pine islands exist in the Lostman's Pine area south of Gum Slough; several hundred more occur in the central portion of the preserve, generally east of the Florida Trail. Some of the pine islands cover as much as 200 acres but most have an area of about 50 acres.

Due to the relatively short hydroperiod of pinelands, these areas have been favored sites for development. Once a prevalent vegetative type of the southeastern United States, old-growth pinelands of Big Cypress collectively constitute the largest such vegetative association remaining in south Florida and are one of the few remaining areas of this size anywhere. For this reason, pinelands are a unique natural resource and are generally recognized as a sensitive area.

5. Red-cockaded Woodpecker

In addition to significance as a vestige of a once widespread vegetation community, old-growth pinelands are essential habitat for the federally listed endangered red-cockaded woodpecker. Once common in the mature pine forests of the southeastern United States, this species has been eliminated from much of its former range by logging and development activities. Mature pines (60 to 80 years of age) infected with red heart disease are required by the red-cockaded woodpecker for nesting cavities. Logging of old-growth pinelands and continued harvesting on short-term rotations has largely eliminated nesting habitat for the woodpecker throughout the Southeast.

Total estimated population of red-cockaded woodpeckers in the preserve is 40 colonies. To date, the locations of 20 active colonies are known, distributed among three areas of the preserve; 6 occur in the Lostman's Pine area, 8 in the east-central portion of the preserve and 6 in the western half (Dr. Bill Robertson, pers. comm.). Other colonies are believed to exist in the pine islands of the Raccoon Point area.

The population of red-cockaded woodpeckers in Big Cypress National Preserve is the largest known to exist in south Florida. Further, this species is afforded protection by the Endangered Species Act of 1973. Red-cockaded woodpecker colonies in the preserve are, therefore, regarded as sensitive resources.

6. Cape Sable Sparrow

A federally listed endangered species, the Cape Sable sparrow is known to have only three population centers in south Florida; two are in

Everglades National Park, and the third in the southern portion of Big Cypress National Preserve. The Cape Sable sparrow apparently has specific habitat requirements. It occupies seasonally flooded, freshwater marshes, which are dominated by hairgrass (Muhlenbergia filipes), (Schoenus nigricans), switchgrass (Panicum virgatum) and beak rush (Rhynchospora spp.). Optimum conditions for the sparrow occur when accumulated litter is removed by burning the prairie vegetation on a four-year rotational basis.

The population of Cape Sable sparrows in Big Cypress contains approximately half (an estimated 3,000 birds) of the known remaining number of the species. This species is also protected by the Endangered Species Act. The most significant threats to the sparrow's continued existence are alteration of its habitat by too frequent or severe fires, invasion of exotic plants, manipulation of the hydrologic system and development--all of these factors may be introduced by oil and gas activities. The Cape Sable sparrow is, therefore, recognized as a sensitive resource of Big Cypress National Preserve.

7. Florida Panther

The Florida panther historically lived in a wide variety of habitats throughout the southeastern United States. Today, it appears to be restricted to isolated habitats of the Big Cypress and southern Everglades. Information describing the abundance and distribution of the Florida panther is extremely limited. Available evidence (sightings, scat, tracks and scrapes) indicates their presence in three areas: in the Fakahatchee Strand, in Everglades National Park and in Big Cypress National Preserve.

Recent studies on the panther, using radio telemetry, indicate that Florida panthers may have home ranges of more than 70 square miles. In fact, one collared individual ranges approximately 200 square miles, roughly half of which is in Big Cypress National Preserve. The portion of this individual's documented home range is shown on the Sensitive Resource Areas map. In addition, three other panthers are known to occupy this area. Vegetation types within their ranges include hardwood hammocks, pinelands, cypress domes and prairies.

Specific habitat requirements of the Florida panther remain to be defined, but it is believed prime habitat criteria are relative isolation from man (i.e., wilderness character of an area) and the presence of an abundant, healthy deer herd, the panther's primary food source. A fundamental cause for the relatively rapid decline in population of the Florida panther is believed to be shooting (USFWS 1981). Lack of population recovery and its continued decline is currently attributed to pressures associated with development and human activity, such as ORV use (Florida Panther Recovery Team 1982).

By virtue of its status as an endangered species (affording it protection under the Endangered Species Act) and the risk of extinction of this species, the Florida panther is identified as a sensitive resource of Big Cypress National Preserve.

8. Florida Trail

Since 1964 more than 500 miles of the Florida Trail, in about 20 segments, have been developed extending north from Big Cypress National Preserve to Blackwater River State Forest near Pensacola, in Florida's western panhandle (USDE, NPS 1981). Existing segments of the Florida Trail traverse forests, swamps, sandhills, prairies, lakes and rivers that harbor some of the most unique biological communities in the South. This trail meets the federal criteria and has been recommended for national scenic trail designation by Congress.

The southern terminus of the Florida Trail, in Big Cypress National Preserve, affords pleasant hiking opportunities during the mild winter months. About 40 miles of the Florida Trail have been developed in Big Cypress. Designated as section one of the Florida Trail, the Big Cypress trail segment includes two loop trails and lies largely between U.S. 41 (Tamiami Trail) and State 84 (Alligator Alley). Providing hikers access into freshwater prairie, cypress and slash pine communities, the trail's environmental values should be guarded; thus, the Florida Trail in Big Cypress is regarded as a sensitive resource.

9. Visual Corridor along Roads and Thoroughfares

A visual corridor extending one-half mile out along both sides of developed roads and major thoroughfares includes facilities to support visitor use and provide for park management. These facilities include the Oasis and Tamiami ranger stations, the preserve headquarters and administrative offices at Ochopee and are essential to the mission of the Park Service.

The visual corridor also encompasses a scenic vista from existing roads and thoroughfares. An important component of most visitors experience in the preserve is observation from their vehicles; maintenance of an unimpeded, natural scene is essential to this type of experience. Visual corridors along roads are consequently regarded as sensitive areas.

10. Miccosukee Indian Cultural Sites

During the Third Seminole War of the mid-1800s, two groups of Indians were forced into the south Florida area. The Miccosukee Indians are estimated to have inhabited this region during the 1800s. Most of these Indians lived in small groups on hammocks in Big Cypress, Everglades and the Ten Thousand Islands.

Formally organized as the Miccosukee Tribe of Indians of Florida in 1961, the Miccosukee who have not moved from the area now live in roadside villages along U.S. 41 or on federal and state reservations north of Big Cypress National Preserve. Most of the population in Big Cypress (estimated at 150 individuals) is composed of independent Miccosukee Indians who do not belong to the federally recognized Miccosukee Tribe and who do not choose to live on reservation land.

The collection of native materials, especially cypress, for crafting of souvenirs and chickee construction constitutes the major use of Big Cypress National Preserve by the Miccosukee. The preserve also serves to satisfy nonmaterial needs of these Indians and is used for religious and other ceremonial purposes. Among these is the major religious ceremony of the Miccosukee, the Green Corn Dance. Medicine men lead this ceremony, which is a ritual of tribal purification and renewal held for several days in June and July.

Generally, the activities involved with these ceremonies cause insignificant damage to the areas in which they are held. These ceremonies are important to the continuance of tribal customs; the sites of these events are regarded as sensitive areas to be avoided by any development activities.

11. Known Archeological Sites

Recent investigations indicate that archeological sites in Big Cypress National Preserve are situated on dryer hammocks along deep sloughs and marshes (USDI, NPS 1982). Hammocks provided dry living sites for historic cultures and were convenient to the network of canoe trails that interlaces Big Cypress. Many multicomponent sites, which contain more than one discrete cultural occupation, were discovered during five seasons of research conducted by the NPS Southeast Archeological Center. Continued research will more clearly define the relationship among what appear to be villages, base camps, transient camps and procurement areas.

In the interest of preventing vandalism, archeological sites have not been shown on the Sensitive Resource Areas map. These archeological sites are essential to research and accurate interpretation of past occupations of the area by man. In addition, these sites have "tremendous potential for answering numerous questions about human behavior and its relation to the environment of south Florida" (USDI, NPS 1982). Archeological resources are protected under the National Historic Preservation Act of 1966 and the Archeological Resources Protection Act of 1979. As valuable cultural resources, archeological sites within Big Cypress are designated as sensitive areas.

12. NPS Research Sites

These areas include vegetation transects, research plots, hydrologic monitoring stations and other sites that support scientific research. The data gathered at these sites are considered essential in providing an accurate baseline framework on which present or future planning, development and park management may be based. Research sites, therefore, are recognized as sensitive areas.

Appendix A:

uidelines Used in Formulating Criteria for Sensitive Resource Areas

. Federal Statutes, Authorities, Regulations, and Congressional reports

1. Public Law 93-440 of 1974. This law established Big Cypress National Preserve, stating its purpose as being to "assure the preservation, conservation and protection of the natural, scenic, hydrologic, floral and faunal, and recreational values of the Big Cypress Watershed . . . and to provide for the enhancement and public enjoyment thereof. . . ." (Section 1!a1). The law also guarantees continued "usual and customary" use and occupation of federal or federally acquired lands and waters in the preserve by both the Miccosukee and Seminole Indian tribes.

   U.S. House of Representatives Report No. 93-502. This report accompanies the enabling act for the preserve and provides additional clarification of the purpose of the preserve. Stating that the Big Cypress watershed is significant for its intrinsic natural values, the report also emphasizes the importance of the watershed as "critical to the survival of . . . the Everglades National Park."

2. The National Park Service Organic Act of 1916 (16 U.S.C. 1 *et seq.*). This act charges the Park Service with conservation of the scenery, natural and historic objects and wildlife of the nation's parks. In addition to conservation of park resources, the act requires that the Park Service promote and regulate public use of these resources in a manner that will leave them unimpaired for enjoyment by future generations.

3. NPS "Management Policies" of 1978. These regulations provide guidance in all aspects of park management including planning, park facilities, natural resource management, cultural resource management and visitor use. With respect to resource development activities on national park lands, such as the exploration for and development of oil and gas (where authorized by law), the "Management Policies" reflect an intent to ensure that these activities are not inimical to the purpose of a given park or would not significantly impair recreation opportunities and the conservation of scenic, scientific, historic, or other values contributing to public enjoyment (Chapter IV, Natural Resource Management). Scientific research programs in national parks are essential in that such programs provide accurate data upon which planning, development and management of parks may be based. (Chapter IV, Natural Resource Management). Park facilities, including administrative offices and ranger stations, are critical to park management, public enjoyment and resource protection (Chapter III, Park Facilities).

4. "Statement for Management", Big Cypress National Preserve. This document presents the purpose of the preserve, significance of its resources, influences on preserve management and management objectives for visitor use and resource preservation. It includes specific management objectives for protecting water flows, water quality and other natural resources; securing accurate environmental data for park management through research; providing visitor services along road corridors; protecting the exercise of customary rights and uses of the preserve by Native Americans; providing access to backcountry areas for recreational purposes; protecting cultural sites; and ensuring that the exercise of legally retained private rights have little or no adverse effect on the preserve's natural resources.

5. Title 36, Part 7, Section 7.86, Code of Federal Regulations - Special Regulations, Areas of the National Park System: Big Cypress National Preserve. This sets forth stipulations for motorized vehicle use and access, use of rotorcraft for oil and gas exploration or extraction and watershed protection.

6. Title 36, Part 9-"Minerals Management," Subpart B 9.30 through 9.52, Code of Federal Regulations - Non-Federal Oil and Gas Rights. These regulations govern the exercise of private oil and gas rights that require access across lands and waters managed by the Park Service. By design, the regulations attempt to ensure that the exercise of such private rights is consistent with the purpose of establishing the affected park, to prevent or minimize environmental and resource damage and to ensure that all units of the National Park System are left in an unimpaired condition for future generations.

7. Endangered Species Act of 1978 (16 U.S.C. 1531 et seq. (1973)). This act requires all federal agencies to promote the conservation of endangered and threatened species. Consultation of federal agencies with the Secretary of the Interior (through the U.S. Fish and Wildlife Service) or the Secretary of Commerce (through the National Marine Fisheries Service) is required by section 7 of the act for any project or program having potential impact on endangered and threatened species. Federal agencies are required to document compliance with the Endangered Species Act through preparation of an environmental assessment or environmental impact statement, indicating whether endangered or threatened plant or animal species are present in the area of a proposed action, the locations of these species' critical and noncritical habitats and an analysis of the impacts of all alternative actions on these species. By law, there can be no adverse impact from a selected alternative on any endangered or threatened species or its critical habitat.

8. The National Environmental Policy Act of 1969 (NEPA) (42 U.S.C 4321 et seq.). This act defines a national policy aimed at

maintaining a high level of environmental quality, increasing knowledge of important ecological systems and natural resources and promoting efforts to minimize environmental damage. In so doing, the act stipulates that unquantified environmental values be given consideration along with economic and technological aspects of any action proposed on federal land. Implementation of this policy requires the Park Service (and all federal agencies), in making decisions, to develop a planning process that provides for objective consideration of the environment and to consider alternatives to any proposed action when there are unresolved conflicts concerning resource use.

9. Public Law 89-665, as amended, The National Historic Preservation Act of 1966 (16 U.S.C. 470 (1966)); and Executive Order 11593 of 1971, "Protection and Enhancement of Cultural Environment" (36 CFR 8921).

   The National Historic Preservation Act of 1966 authorizes expansion of the National Register of Historic Places to encompass not only properties of national historical significance, but also those of state and local significance. It extends federal concern for historic preservation by directing any federal agency initiating an undertaking that might affect a listed or eligible National Register property to allow the Advisory Council on Historic Preservation an opportunity to comment upon it.

   Executive Order 11593 of 1971 furthers the purposes of NEPA, the National Historical Preservation Act and other earlier preservation legislation. It directs federal agencies to survey and nominate to the Secretary of the Interior all properties under their control that might qualify for listing in the National Register of Historic Places. It also stipulates that specific measures will be taken toward the preservation of cultural resources on these properties.

10. Executive Order 11988 of May 24, 1977, "Floodplain Management" (42 FR 26951). The purposes of Executive Order 11988 are "to avoid to the extent possible the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternate." Federal agencies are directed by the act to take action to reduce the risk of flood loss, minimize the impact of floods on human safety and restore and preserve natural and beneficial values served by floodplains.

11. Executive Order 11990 of May 24, 1977, "Protection of Wetlands" (42 FR 26961). The purposes of Executive Order 11990 are to prevent, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The order directs each federal agency in carrying

out its responsibilities to provide leadership and take action to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Executive Order 11990 and Executive Order 11988 were both issued on May 24, 1977, as part of the President's message on the environment. Of the two Orders, E.O. 11988 is more detailed and has tighter compliance procedures. Most of the nation's wetlands are located on floodplains, so planning for wetlands also must comply with Executive Order 11988.

In preparing plans for development, public use and resource management, planners should determine the locations of swamps, marshes, bogs, wet meadows, mudflats and other wetlands within the planning area and should ensure that the quality of these resources is preserved and enhanced to the greatest degree possible. The nature and significance of the effects of proposed actions on the identified wetlands should be recorded in appropriate NEPA compliance documents. If adverse effects on wetlands would occur, the plan should show that there is no practicable alternative to the use of wetlands and that all practicable mitigating measures have been incorporated into the proposal.

12. Public Law 95-341, "The American Indian Religious Freedom Act" (42 U.S.C. 1997). Reaffirms the policy of the United States Government to protect and preserve the inherent first admendment rights of the American Indian (including Eskimo, Aleut and Native Hawaiian peoples) to believe, express and exercise their traditional religions. The responsibility of the National Park Service is to protect those rights on lands administered by the agency, including but not limited to access to ceremonial sites, site protection, use and possession of sacred objects and the freedom to worship through ceremonial and traditional rights.

13. The National Trails System Act of 1983 (16 U.S.C. 1241 et seq.). Enacted in 1968, the National Trails System Act established a national system of scenic, historic and recreational trails, designating the 2,000-mile-long Appalachian Trail and the 2,350-mile-long Pacific Coast Trail as the first components of the system. It further defined methods for identification of other trails eligible for inclusion in the system, and authorized the Secretary of the Interior and the Secretary of Agriculture to study the suitability of other trails for this purpose. Fourteen trail routes, among them the Florida Trail, were designated by the act for inclusion in the National Trails System.

14. The Clean Water Act of 1977, as amended (Public Law 95-217). The Federal Water Pollution Control Act, as amended, states a national policy to enhance the quality of water resources and to prevent, control and abate water pollution. It defines the

responsibility of federal agencies to cooperate with the act and with the affected states(s) to prevent or control water pollution in federal properties. Actions potentially affecting water quality must be evaluated to ensure they are in harmony with the policy objective of the act.

15. Coastal Zone Management Act of 1972 (16 U.S.C 1451). This act states a national policy "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone. . . ." Federal agencies conducting projects or activities directly affecting the coastal zone are required by section 307(c) of the act to conduct these projects, as much as possible, in a manner consistent with the approved state coastal zone management plan.

    The primary state authority for coastal zone management is the Florida Coastal Management Act of 1978, Part II of Chapter 380, F.S. This statute expresses the legislative intent toward management of the state's coastal area and authorizes the Department of Natural Resources (DNR) to develop a coastal management program. The legislature declared that the coast contains natural, commercial, recreational, ecological, industrial and aesthetic resources, and that it is in the state and national interest to "protect, maintain and develop these resources through coordinated management." Based upon this authority, the DNR compiled a program of policies and legal authorities codified under the Florida statutes.

    The statutes that constitute the FCMP are of three general types. Most establish state policy on substantive matters such as fisheries, water resources and state lands. Other statutes combine substantive policy and procedural matters. An example of this kind of statute is the Industrial Siting Act. The state uses these first two types of authorities in its federal consistency reviews. Finally, some statutes are primarily procedural and establish processes for developing or implementing state policy.

16. Office of Management and Budget, Circular A-95 (38 FR 32874). This circular describes the purpose of statewide and areawide clearing houses. Three principal functions are defined, the third being relevant to oil and gas development in Big Cypress: to give state, regional and local agencies an opportunity to comment on environmental impact statements concerning development on federal lands. Federal agencies are required to consult with the appropriate state governor, statewide and areawide clearing houses and local elected officials at the earliest practical stage of planning to determine the relationship between the proposed development plan and plans of state, regional and local agencies.

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As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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